

What is claimed is:

1. An engine fuel injection apparatus, comprising:  
a first fuel injection valve provided on an upstream side of an air intake passage of an engine;  
a second fuel injection valve provided on a downstream side of the air intake passage;  
and  
a fuel pump for supplying fuel to the first and the second fuel injection valves,  
wherein said fuel pump is connected to the second fuel injection valve via the first fuel injection valve or to the first fuel injection valve via the second fuel injection valve by a fuel feed pipe, so that fuel does not return to a fuel tank of the engine.
2. The engine fuel injection apparatus according to claim 1, wherein the fuel pump is connected to the second fuel injection valve via the first fuel injection valve by the fuel feed pipe, the first fuel injection valve is a fuel injection valve for high-speed operation that injects fuel when a number of revolutions of the engine is high, and the second fuel injection valve is a fuel injection valve for low-speed operation that injects fuel when the number of revolutions of the engine is low.
3. The engine fuel injection apparatus according to claim 1, wherein the fuel pump is connected to the first fuel injection valve via the second fuel injection valve by the fuel feed pipe and the first fuel injection valve is disposed at a level higher than the second fuel injection valve.
4. The engine fuel injection apparatus according to claim 1, wherein said fuel feed pipe passes through a space between a front wall of the fuel tank and a rear wall of an air chamber of the engine.
5. The engine fuel injection apparatus according to claim 2, wherein said fuel feed pipe passes through a space between a front wall of a fuel tank of the engine and a rear wall of an air chamber of the engine.

6. The engine fuel injection apparatus according to claim 1, wherein there are a plurality of each of said first and second fuel injection valves, said first fuel injection valves are connected to each other through a first header pipe, and said second fuel injection valves are connected to each other through a second header pipe.

7. The engine fuel injection apparatus according to claim 2, wherein there are a plurality of each of said first and second fuel injection valves, said first fuel injection valves are connected to each other through a first header pipe, and said second fuel injection valves being connected to each other through a second header pipe.

8. The engine fuel injection apparatus according to claim 3, wherein there are a plurality of each of said first and second fuel injection valves, said first fuel injection valves are connected to each other through a first header pipe, and said second fuel injection valves being connected to each other through a second header pipe.

9. The engine fuel injection apparatus according to claim 1, wherein said fuel feed pipe includes first and second fuel pipes, said first fuel pipe extends from said fuel pump to said first fuel injection valve, and said second fuel pipe extends from said first fuel injection valve to said second fuel injection valve.

10. The engine fuel injection apparatus according to claim 1, wherein said fuel feed pipe includes first and second fuel pipes, said first fuel pipe extends from said fuel pump to said second fuel injection valve, and said second fuel pipe extends from said second fuel injection valve to said first fuel injection valve.

11. A fuel injection apparatus for an engine, comprising:  
a first fuel injection valve provided on an upstream side of an air intake passage of an engine;  
a second fuel injection valve provided on a downstream side of the air intake passage;  
a fuel tank; and  
a fuel pump, said fuel pump including an inlet in communication with said fuel tank and an outlet connected to a fuel feed pipe to supply fuel to the first and the second fuel injection valves, said fuel feed pipe including a first fuel pipe connected between said fuel

pump and one of said first and second fuel injection valves and a second fuel pipe connected between said first and second fuel injection valves.

12. The fuel injection apparatus according to claim 11, wherein said first fuel pipe connects the fuel pump to the first fuel injection valve, the first fuel injection valve is a fuel injection valve for high-speed operation that injects fuel when a number of revolutions of the engine is high, and the second fuel injection valve is a fuel injection valve for low-speed operation that injects fuel when the number of revolutions of the engine is low.

13. The fuel injection apparatus according to claim 11, wherein said first fuel pipe connects the fuel pump to the second fuel injection valve and the first fuel injection valve is disposed at a level higher than the second fuel injection valve.

14. The fuel injection apparatus according to claim 11, wherein said first and second fuel pipes pass through a space between a front wall of the fuel tank and a rear wall of an air chamber of the engine.

15. The fuel injection apparatus according to claim 12, wherein said first and second fuel pipes pass through a space between a front wall of the fuel tank and a rear wall of an air chamber of the engine.

16. The fuel injection apparatus according to claim 11, wherein there are a plurality of each of said first and second fuel injection valves, said first fuel injection valves are connected to each other through a first header pipe, and said second fuel injection valves are connected to each other through a second header pipe.

17. The fuel injection apparatus according to claim 12, wherein there are a plurality of each of said first and second fuel injection valves, said first fuel injection valves are connected to each other through a first header pipe, and said second fuel injection valves being connected to each other through a second header pipe.

18. The fuel injection apparatus according to claim 13, wherein there are a plurality of each of said first and second fuel injection valves, said first fuel injection valves

are connected to each other through a first header pipe, and said second fuel injection valves being connected to each other through a second header pipe.